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ABSTRACT

Computer software that is intended to assist the qualitative researcher in the analysis of textual data is relatively new. One such program, the Data Collector, is a HyperCard computer program designed for use on the Macintosh computer. A tool for organizing and analyzing textual data obtained from observations, interviews, surveys, and other documents, the program also includes a component called the "BiblioStack" that facilitates note-taking for a literature review. These two components may be used together or independently. This paper describes the criteria for the program's development, the rationale for using HyperCard, and the features of both the Data Collector stack and the BiblioStack. It is noted that this software is simply a tool for organizing and managing the data; the researcher must develop the relevant coding categories, identify emerging themes, and support his or her interpretations from the data. (DB)

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The Data Collector: A Qualitative Research Tool

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The Data Collector: A Qualitative Research Tool

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Researchers using both qualitative and quantitative data are concerned with the ways in which information can best be organized, analyzed and shared. Software tools for analyzing quantitative data have been widely available since the earliest days of computers, but software that assists the qualitative researcher in the analysis of textual data is relatively new.

During this session we will demonstrate a HyperCard program for the Macintosh, the *Data Collector*, which we designed for our own research and have now made available to other researchers through Intellimation. The *Data Collector* is a tool for organizing and analyzing textual data obtained from observations, interviews, surveys, and other documents. The program also includes a component called the *BiblioStack* that facilitates note-taking for a literature review. These two components may be used together or independently.

This paper describes the criteria for the program's development, the rationale for using HyperCard, and the features of both the Data Collector stack and the BiblioStack.

Criteria for the Program's Development

Wellman and Sim (1990) have identified several criteria for evaluating software meant to be used in qualitative research. These criteria include

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flexibility, preserving the richness of the material, ease of use, and analytic power.

Flexibility. The researcher should be able to change and add code words because objectives and understanding change during the analytic process.

Preserve richness of material. Wellman and Sim recommend that textual analysis software allow the researcher to examine the material in context and to compare similar texts for analysis.

Ease of use. Researchers should be able to use the software without having to depend on an expert consultant.

Analytic power. Textual analysis software should help to identify classes of concepts, do complex Boolean searches, and provide output in a form that facilitates analysis.

In designing this program we have made every effort to take these criteria into consideration.

Why HyperCard?

Both the Data Collector and the BiblioStack are written in HyperCard, an authoring program for the Macintosh that allows access to a large body of information in a variety of different ways. An important characteristic of HyperCard is that any piece of information can be linked to any other piece of information, creating a web of related ideas. Because HyperCard facilitates the linking of many disparate pieces of text, it seemed to us an ideal environment for organizing and analyzing qualitative data.

Features of the Data Collector Stack

The Data Collector stack has as its backbone a single card where you can enter any kind of textual data (Figure 1). Data may be typed into a scrolling

Notes field or imported into the Notes field from a word processor. In addition to the Notes field, there are fields for the type of data (interview, observation, survey, historical document), general site description, the specific setting, the name of the researcher and the date.

Boolean searching. HyperCard's normal Find function has been enhanced to include Boolean searching using multiple *and's* and *or's*. The Find and Find Again options in the Utilities menu locate all occurrences of a specified word or phrase. The results of the search may be viewed on the screen or copied to a specific topic card created by the researcher.

Coding. The Coding menu allows you to code a document, as well as to add, change or delete code words during the analysis process. First, enter your own code words. Then you click on a code word in your list and click on the paragraph to be coded. The code word is placed within brackets at the beginning of that paragraph.

Copying text to a topic card. To facilitate the data reduction process and in order to construct themes and domains for further analysis, text may be copied to topic cards, thereby reducing the data to smaller, more manageable divisions for further analysis. To do this, highlight the selected text using the mouse and click the Copy Text button. You choose whether to copy text to an existing topic card or to a newly created topic card. When the text is copied to the card, information identifying the source of the data accompanies it. To continue the data reduction process, the text on the topic cards can be coded and even copied to a new topic card.

Comparative viewing. The Compare Cards button allows you to view two cards on the screen simultaneously. To mark cards for comparative viewing, click on the dotted corner on the card; the corner will turn down. The marked cards are then placed in a separate stack in another window on the screen for

easy comparison with the original stack. The ability to compare documents aids in the triangulation process. While in this mode, text from either window may be copied to new or existing topic cards.

Importing and exporting text. The Export and Import items in the Utilities menu provide a means for transferring text files to and from word processing programs.

Features of the BiblioStack

The second component of the *Data Collector* program is the BiblioStack, which facilitates note-taking for a literature review. From the BiblioStack you can create reference cards containing information about a citation along with any number of note cards related to that citation.

Reference cards. The reference card for each bibliographic entry includes standard bibliographic information, a field for key words, and a field for the citation abstract (Figure 2). The complete citation is placed in one field, thus you can enter it using either APA, Chicago, MLA or any other style. Citations can be directly exported to a word processing program to create a bibliography or list of references. No retyping is needed if the citation has been entered into the BiblioStack using the proper style, although additional formating may be necessary.

Note cards. Each reference card has associated with it any number of note cards. Each note card contains a field for notes and a field for key words relevant to the particular note (Figure 3).

Boolean searching. You can perform Boolean searches to find any word or phrase in a reference card or note card. The results of the search are viewed on the screen and may be printed out.

Topic stacks. Reference cards meeting a particular search criteria can be marked and copied, with all their note cards, to a new independent topic stack. In this way you can create separate bibliographic stacks for different research projects from your original stack.

Conclusion

Although originally designed for our own use, we believe the *Data Collector* demonstrates the viability of using technology to meet the needs of the qualitative researcher. It is important to remember, though, that the software is simply a tool for organizing and managing the data; the researcher must still do the analysis. The researcher must develop the relevant coding categories, identify emerging themes, and support his or her interpretations from the data. However, software tools such as this one can simply the mechanical aspects of that task considerably.

References

Wellman, B., & Sim, S. (1990, February). Integrating textual and statistical methods in the social science. *CAM Newsletter*, pp. 1-3, 10-11.

Turner, S., & Handler, M. (1991). *The data collector: A qualitative research tool* [software and manual]. Santa Clara, CA: Intellimation.

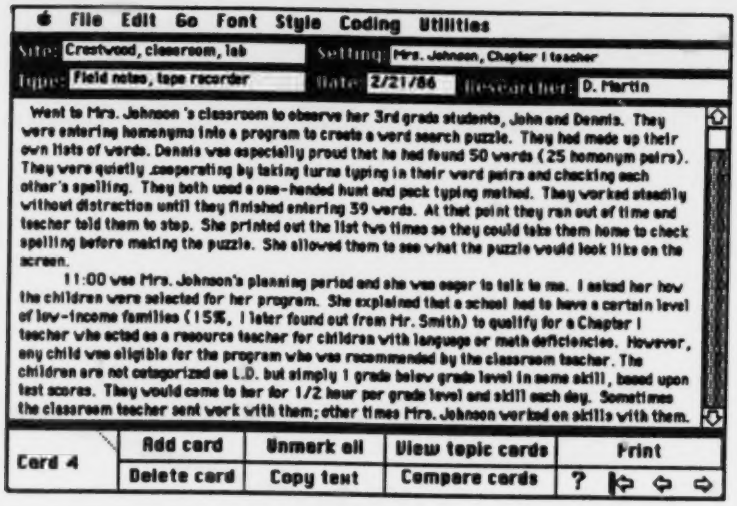
File Edit Go Font Style Coding Utilities
Site: Crestwood, classroom, lab
Setting: Mrs. Johnson, Chapter I teacher
Types: Field notes, tape recorder
Date: 2/21/86
Researcher: D. Martin
Went to Mrs. Johnson 's classroom to observe her 3rd grade students, John and Dennis. They were entering homonyms into a program to create a word search puzzle. They had made up their own lists of words. Dennis was especially proud that he had found 50 words (25 homonym pairs). They were quietly cooperating by taking turns typing in their word pairs and checking each other's spelling. They both used a one-handed hunt and peck typing method. They worked steadily without distraction until they finished entering 39 words. At that point they ran out of time and teacher told them to stop. She printed out the list two times so they could take them home to check spelling before making the puzzle. She allowed them to see what the puzzle would look like on the screen.
11:00 was Mrs. Johnson's planning period and she was eager to talk to me. I asked her how the children were selected for her program. She explained that a school had to have a certain level of low-income families (15%, I later found out from Mr. Smith) to qualify for a Chapter I teacher who acted as a resource teacher for children with language or math deficiencies. However, any child was eligible for the program who was recommended by the classroom teacher. The children are not categorized as L.D. but simply 1 grade below grade level in some skill, based upon test scores. They would come to her for 1/2 hour per grade level and skill each day. Sometimes the classroom teacher sent work with them; other times Mrs. Johnson worked on skills with them.
Card 4
Add card
Delete card
Unmark all
Copy text
View topic cards
Compare cards
Print
?

Figure 1

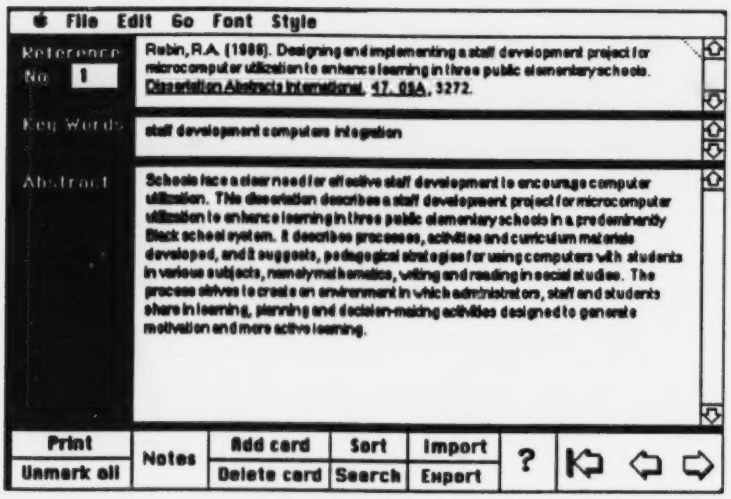
File Edit Go Font Style
Reference No 1
Rubin, R.A. (1986). Designing and implementing a staff development project for microcomputer utilization to enhance learning in three public elementary schools. Dissertation Abstracts International, 47, 09A, 3272.
Key Words
staff development computers integration
Abstract
Schools face a clear need for effective staff development to encourage computer utilization. This dissertation describes a staff development project for microcomputer utilization to enhance learning in three public elementary schools in a predominantly Black school system. It describes processes, activities and curriculum materials developed, and it suggests, pedagogical strategies for using computers with students in various subjects, namely mathematics, writing and reading in social studies. The process strives to create an environment in which administrators, staff and students share in learning, planning and decision-making activities designed to generate motivation and more active learning.
Print
Unmark all
Notes
Add card
Delete card
Sort
Search
Import
Export
?

Figure 2

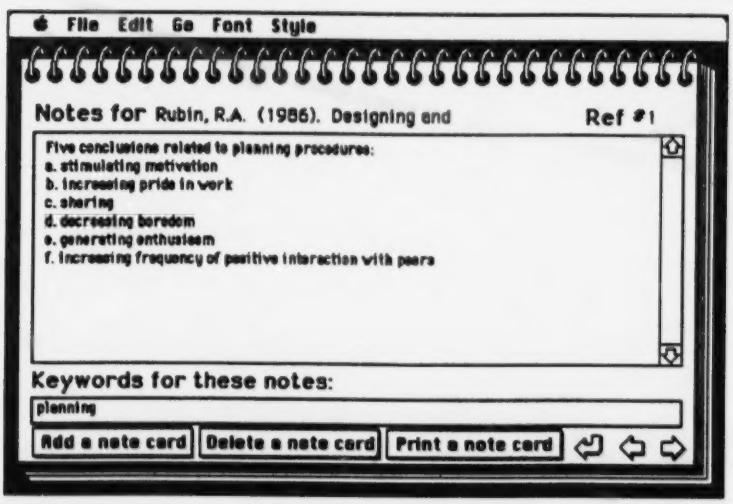
File Edit Go Font Style
Notes for Rubin, R.A. (1986). Designing and
Ref #1
Five conclusions related to planning procedures:
a. stimulating motivation
b. increasing pride in work
c. sharing
d. decreasing boredom
e. generating enthusiasm
f. increasing frequency of positive interaction with peers
Keywords for these notes:
planning
Add a note card
Delete a note card
Print a note card

Figure 3

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